IT IS CLAIMED:

1. A method of detecting each or any of a plurality of known, selected nucleotide target sequences, comprising:

(a) contacting the target sequences with a set of electrophoretic tag (e-tag) probes, the set comprising j members, and each of said e-tag probes having the form:

$(D, M_j) - N - T_j$, where

(i) D is a detection group comprising a detectable label;

(ii) T_j is an oligonucleotide target-binding moiety having a sequence of nucleotides U_i connected by intersubunit linkages $B_{i, i+1}$, where i includes all integers from 1 to n, and n is sufficient to allow the moiety to hybridize specifically with a target nucleotide sequence;

(iii) N is a nucleotide joined to U_1 in T_j through a nuclease-cleavable bond;

(iv) M_j is a mobility modifier having a charge/mass ratio that imparts a unique and known electrophoretic mobility to a corresponding e-tag reporter of the form $(D, M_j) - N$, within a selected range of electrophoretic mobilities with respect to other e-tag reporters of the same form in the probe set, where the e-tag reporter $(D, M_j) - N$ does not itself contain nuclease-cleavable bonds; and

(v) (D, M_j)- includes both $D - M_j$ - and $M_j - D$ -;

said contacting being carried out under conditions that allow hybridization of the target-binding moiety to complementary target sequences,

(b) treating the hybridized target sequences with a nuclease under conditions effective to cleave target-hybridized probes at their $N - U_1$ linkages, thereby producing a mixture of one or more corresponding e-tag reporters of the form $(D, M_j) - N$, and uncleaved and/or partially cleaved probes,

(c) exposing the mixture to a capture agent effective to bind to uncleaved and/or partially cleaved probes, but not to e-tag reporters, thereby to (i) impart a mobility to the probes bound to capture agent that prevents the probes from electrophoretically migrating within said range of electrophoretic mobilities or (ii) immobilize the probes on a solid support,

(d) fractionating e-tag reporters having the form $(D, M_j) - N$ by electrophoresis, to effect separation of the e-tag reporters, and

(e) identifying the electrophoretic mobilities of one or more electrophoretic bands, each band uniquely corresponding to an e-tag reporter that is uniquely assigned to a known target sequence.

2. The method of claim 1, wherein each probe has the form $D - M_j - N - T_j$ and the corresponding e-tag reporter has the form $D - M_j - N$.

3. The method of claim 1, wherein each probe has the form $M_j - D - N - T_j$ and the corresponding e-tag reporter has the form $M_j - D - N$.

4. The method of claim 1, for use in detecting a single nucleotide polymorphism in a target sequence, wherein the oligonucleotide sequence T_j is selected to allow 5'-probe hybridization to the target sequence only if the target sequence contains a designated base at the site of the polymorphism.

5. The method of claim 1, wherein at least one nucleotide U_i in the target-binding moiety contains a capture ligand capable of binding specifically to said capture agent, where $i \geq 1$.

6. The method claim 5, wherein the capture ligand is biotin, and the capture agent is avidin or streptavidin.

7. The method of claim 5, wherein the capture ligand is an antigen and the capture agent is an antibody or antibody fragment that binds specifically to the antigen.

8. The method of claim 1, wherein the capture agent is a polycation and the oligonucleotide has a negatively charged backbone.

9. The method of claim 1, wherein the N - U_1 linkage is a phosphodiester bond, and the target-binding moieties contain a nuclease-resistant bond $B_{i, i+1}$, where i includes at least 1, and the nuclease-resistant bond(s) is one or more linkages selected from the group consisting of thiophosphate, phosphinate, phosphoramidate, amide, and boronate linkages.

10. The method of claim 9, wherein at least one nucleotide U_i, $i > 1$ in said oligonucleotide contains a capture ligand capable of binding specifically to said capture agent.